

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re U.S. Patent Application of:)
Karl T. Heck et al.)
U.S. Application No.: 10/724,143)
Filing Date: December 1, 2003).
Confirmation No.: 1119)
For: MOBILE DUAL CONTAINMENT HIGHWAY TANK)
Examiner: ROST, Andrew J.
Art Unit: 3753

APPEAL BRIEF FILED UNDER 37 CFR 41.37

M.S. Appeal Brief - Patents
Commissioner for Patents
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TO THE COMMISSIONER FOR PATENTS:

This Appeal Brief is filed in support of the Notice of Appeal filed Oct 6, 2009, appealing the Examiner's final rejection dated July 6, 2009, of pending Claims 1, 2, and 4 - 23. Claims 1, 2 and 4 - 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins, Jr. (US patent no. 4,394,027) in view of Yamamoto (US patent no. 3,724,703).

INDEX

	Page
(i). THE REAL PARTY IN INTEREST	3
(ii). RELATED APPEALS AND INTERFERENCES	4
(iii). STATUS OF CLAIMS	5
(iv). STATUS OF AMENDMENTS	6
(v). SUMMARY OF CLAIMED SUBJECT MATTER	7
(vi). GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL	9
(vii). ARGUMENT	10
1. The rejection of Claims 1, 2 and 4 – 19 over Watkins in view of Yamamoto	11
2. The rejection of Claims 20 – 23 over Watkins in view of Yamamoto	16
(viii). CONCLUSION	18
(ix). CLAIM APPENDIX	19
(x). EVIDENCE APPENDIX	22
(xi). RELATED PROCEEDINGS APPENDIX	23

(i). REAL PARTY IN INTEREST

The Assignee, Envirotankers Inc., is the real party in interest, by way of an assignment recorded on July 18, 2007.

(ii). RELATED APPEALS AND INTERFERENCES

A prior appeal was filed for this application. The examiner reopened prosecution with new grounds of rejection.

(iii). STATUS OF CLAIMS

Claim 3 has been cancelled. Claims 1, 2 and 4 – 23 have been finally rejected, and it is these rejections that are being appealed.

(iv). STATUS OF AMENDMENTS

No amendments to the application have been filed subsequent to the final rejection of July 6, 2009.

(v). SUMMARY OF CLAIMED SUBJECT MATTER

Of the claims at issue, claims 1, 20 and 23 are independent claims. Claims 2 – 19 depend directly or indirectly from claim 1, and claims 21 and 22 depend from claim 20. Claim 23 makes reference to claim 1 in its method steps. Claim 1 is directed toward a highway tank for onsite storage of fuel, whereas claims 20 and 23 relate to a method of transporting and storing fluids using a highway tank. In the summary below, the paragraph numbers refer to the numbers in the application as filed.

As set out in claim 1, the highway tank comprises a chassis 102 (para. 11), ground engaging wheels 104 supported by the chassis 102 (para. 11), a double-walled tank 106 mounted on the chassis 102 in a horizontally disposed manner (para. 11, 12), and a fluid transfer system 108 connected to the tank 106 for filling and discharging the tank 106. The fluid transfer system 108 is mounted on the chassis 102 and connected to the tank 106 for fluid transfer (para. 11, 13, 14), the fluid transfer system comprising fuel-forwarding equipment (in the embodiment shown, fuel filter 202, hose 206, hose reel 208, fuel pump 210, generator 204 and meter 212) (para. 13).

The method set out in claim 20 comprises providing a tank 106 that is double walled on a chassis 102 in a horizontally disposed matter (para. 11). The chassis 102 also supports ground engaging wheels 104 (para. 11). The tank 106 is connected to a fluid transfer system 108 for filling and discharging the tank 106 (para 11, 13, 14), the fluid transfer system comprising fuel-forwarding equipment (in the embodiment shown, fuel filter 202, hose 206, hose reel 208, fuel pump 210, generator 204 and meter 212) (para. 13). The method also comprises the steps of filling the tank 106 with a fluid, transporting the fluid to a location (para 12), and storing the fluid in the tank 106 at the location (para 12), and using the fuel forwarding equipment to fuel equipment used at the location (para 13, 14 15). The tank 106 may be cylindrical, and it may be refilled at the location (para. 13, 14, 15).

The method set out in claim 23 comprises the steps of providing a tank 106 as defined by claim 1, filling the tank 106 with a fuel, transporting the fuel to a location, storing the fuel in the tank 106 at the location, and using the tank 106 at the location to fuel equipment used at the location (para. 13, 14, 15).

(vi). GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 2 and 4 – 23 currently stand rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins, Jr. (US patent no. 4,394,027) in view of Yamamoto (US patent no. 3,724,703). In view of this rejection, the issue presented for review on appeal is as follows:

Issue: Whether Claims 1,2 and 4 – 23 are unpatentable over Watkins, Jr. (US patent no. 4,394,027) in view of Yamamoto (US patent no. 3,724,703)

(vii). ARGUMENT

This is an appeal to the Board of Patent Appeals and Interferences from the office action dated July 6, 2009. In the detailed action, the examiner rejected claims 1, 2 and 4 - 23 under 35 U.S.C. 103(a) as being unpatentable over Watkins, Jr. (US 4,394,027, hereinafter "Watkins") in view of Yamamoto (US 3,724,703, hereinafter "Yamamoto").

Under 35 U.S.C. 103(a), a rejection of the claims generally must meet four key elements as set out by the Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), and summarized in the *Manual of Patent Examining Procedure (MPEP) Edition 8 (E8), August, 2001, Latest Revision July 2008*, s. 2141. These elements are as follows:

- (A) Determining the scope and contents of the prior art;
- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations.

The applicant submits that the examiner has failed to determine correctly the scope and contents of the prior art and also to assess properly the differences between the references and the claimed invention.

The applicant further submits that the Examiner incorrectly combined the cited references to support the obviousness rejection. The Supreme Court decision in *KSR Int'l Co. Inc. v. Teleflex Inc.* 550 U.S. 398 (2007) has rejected a strict adherence to the teaching, suggestion and motivation test. However, the court also affirmed that "[a] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art" (at II(B)) and that there must still be some motivation to combine the references.

Watkins teaches a transport tank for fuel (abstract). The tank may be used as a highway tank (column 8 lines 10-11). Watkins also discloses a tractor associated with the tank. The tractor has removable fuel forwarding equipment (column 2 lines 37-39; column 4 line 13 to column 5 line 55). The combination of the tractor and tank are intended primarily for use in refueling jet aircraft (column 2 lines 31-32. The tractor may be used, with the fuel forwarding equipment removed and with further modifications, as a tractor for a highway tank (column 8 lines 11-15). Watkins does not disclose or suggest any double wall, and does not disclose or suggest any use of the tank as a storage tank

Yamamoto teaches a tank for low temperature liquids, particularly liquefied gas (column 2 lines 43-55). The tank is intended for use in a tanker ship or as a stationary storage container (column 2 lines 43-55). In an embodiment as a tanker ship, there is an outer hull and an inner hull, the inner hull lined interiorly with a heat-insulating layer, and interior of the insulating layer are two inner metallic membrane tank layers (column 2 lines 52-67). The outer of the two metallic membrane layers has a thickness of about 4-6 mm and the inner of the two has a thickness of about 1 mm (column 3 lines 6-8). A vacuum pump is applied to the space between the membranes. The reduction in pressure keeps the membranes in close contact with each other and supports the thin inner membrane when the tank is empty (column 3 line 59 to column 4 line 8). The gas sampled by the vacuum pump can be analyzed to detect leaks (column 4 lines 17-19). Yamamoto includes a “description of the prior art” mentioning that prior membrane tanks for liquefied gas required a secondary barrier to stop the escape of fluid that had leaked from the membrane. This is expensive, and Yamamoto addresses this problem through the use of a cheaper second membrane instead of the conventional secondary barrier (column 1 lines 21-45).

1. The rejection of Claims 1, 2 and 4 – 19 over Watkins in view of Yamamoto

a. *Ascertaining the differences between the claimed invention and the references*

Watkins does not teach a highway tank for onsite storage of fuel or a double-walled tank.

Yamamoto teaches a double-walled tank in the substantially different context of liquefied gas tanker ships and onshore liquefied gas storage facilities. Yamamoto does not teach a highway tank for onsite storage of fuel. He does teach that in the specific context of liquefied gas, a common form of tank design can be used for a tanker ship or an onshore storage facility, but even in that context does not teach the use of a single tank for both purposes.

Claim 1 requires a highway tank for onsite storage of fuel, the highway tank being double-walled and mobile. Onsite storage of fuel in the context of the claim means longer term storage such as would result in a regulatory requirement that the tank must have secondary containment. This is apparent from the background and summary (paragraphs 1-3) of the instant application .

Neither Watkins nor Yamamoto teaches or suggests a double-walled highway tank or a highway tank for onsite storage of fuel.

b. Resolving the level of ordinary skill in the pertinent art

The Applicant submits that the skilled worker in the art would likely be a highway tank operator. The skilled worker would not be highly educated, having at most a high school diploma, and potentially a technical training certificate in his field. The level of skill that this individual would be expected to have is low.

c. Determination of whether the claimed invention would have been obvious to one of ordinary skill in the art

Thus, the question to be asked is whether or not the claimed invention would have been obvious to one of ordinary skill in the art, in consideration of the resolved Graham factual inquiries.

Non-obviousness of a double-walled highway tank

Watkins, Jr. teaches a fuel transport land vehicle that uses a trailer. As recognized by the Examiner, Watkins, Jr. does not teach a double-walled tank. The Examiner argues that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tank of Watkins, Jr. as a double-walled tank as taught by Yamamoto in order to allow for easy leak detection by analyzing the gas in the space between the double-walled portion of the tank” (emphasis added)

The Applicant submits that ease of leak detection would provide insufficient motivation to modify Watkins, Jr. to have a double-walled tank. The tank taught by Watkins, Jr. is single-walled, and as with other single walled tankers, is sufficiently safe to transport hazardous fluid such as jet fuel according to present regulations. According to the industry’s understanding of fuel transportation, adding a second wall would increase the weight and expense of the tank without any tangible benefit. Single walled tanks for transportation may easily be inspected for present and potential future leaks from the outside, whereas the inner wall of a multi-walled tank cannot easily be inspected. It is useful for a multi-walled tank to have a means for detection of leaks in the inner wall as without such detection a leak in the inner wall might go unnoticed and result in an accumulation of fluid in the space between the inner and outer walls. By contrast, due to the ease of inspection of a single walled tank, no leak detection means beyond routine inspection is required for a single walled tank. Thus, while the use of a multi-walled tank may supply a motivation for means for leak detection, the need for detection of leaks does not supply a motivation for a double-walled tank.

Therefore, it only makes sense to use a multi-walled tank where a tank must be double-walled for reasons other than leak detection, or where a tank would not be easily inspectable even if it were single walled. Cryogenic tanks for tanker ships as in Yamamoto have insulation making the liquid barrier difficult to inspect. As the outer hull of a tanker ship is not suitable for use as the sole wall of a cryogenic fluid tank, there must be an inner tank wall interior to the

outer hull of the ship which is inherently difficult to inspect. Thus it makes sense in the context of a tanker ship to have a multiple walled tank and an automated leak detection mechanism to detect leaks in the inner wall, since it is difficult to inspect the tank even if a single walled tank is used. The fuel tank disclosed by Watkins Jr. is not used for cryogenic material so there is no similar motivation to use a second wall.

Non-obviousness of using a single tank for both transportation and on-site storage of fuel

Claim 1 refers to a highway tank for onsite storage of fuel that comprises a double-walled tank. The tank can therefore be used to (1) transport fuel, (2) store fuel onsite, and (3) deliver fuel onsite. Watkins Jr. is concerned solely with the transportation and delivery of jet fuel. Watkins Jr. does not teach using the tank for onsite storage of fuel, and, as argued above, there is no motivation to modify Watkins Jr. to have a double-walled tank. The examiner asserts that Watkins would be used for on-site storage in that fuel would be contained in the trailer until needed. Applicant submits that a person of ordinary skill in the art would not consider the temporary parking of a transportation tank to be onsite storage of fuel. Rather, onsite storage of fuel means longer duration storage of fuel, such as would lead to a regulatory requirement that the tank have secondary containment. As stated in the background of the present application, “[o]perators of machinery such as heavy equipment or helicopters on remote sites are required to have spill containment for their fuel storage system.” The background then states difficulties of prior art methods of constructing or placing tanks with spill containment. In the summary it is stated that “[t]his invention provides a highway tank that can ... provide the necessary features to store the fuel on-site” and that “[t]here is therefore provided ... a highway tank for onsite refueling without requiring separate provision of dual containment at the site.” These statements would reinforce to a person skilled in the art that an object of the invention is to more conveniently provide a tank with spill containment where that is required by regulations, and that the term “onsite storage of fuel” in the claims refers to situations in which spill containment is required by regulations. As the tank of Watkins Jr. does not have spill containment, it could not

be used for onsite storage of fuel without the addition of a spill containing structure.

Yamamoto discloses a multi-walled design for a cryogenic fuel tank which may be used to build either a tank for a tanker ship or an onshore tank. Yamamoto does not disclose onsite storage of fuel using a transportation tank, and the considerations involved in using a tanker ship for onsite storage of fuel would be sufficiently different from those involved in using a highway tank for onsite storage of fuel that Yamamoto would be irrelevant in any case.

The current industry practice for crews requiring a fuel dump, such as oil and gas, forestry, and seismic crews, is to transport a storage tank to a desired location. The storage tank must comply with the applicable regulations related to storage tanks, which means that the tank must be double-walled. The applicable standard in Canada for storage tanks is cited as reference C2 in the information disclosure statement. This storage tank is transported empty. A highway tank that complies with the transportation regulations cited as reference C1 in the information disclosure statement, but not the storage tank regulations, is then brought out to fill the storage tank. If the storage tank needs to be moved, it is first emptied, and then refilled in its new location. Thus, there are tanks used for transporting fuel to a site, and there are tanks for storing the fuel on site. The tanks used are not designed, and are therefore inappropriate, to perform both functions.

The double-walled tank claimed by the Applicant allows a crew to drive a highway tank full of fuel to a site, and then use it as a storage tank from which fuel may be delivered as needed to re-fuel vehicles. Thus, instead of having to provide two tanks for transportation and storage, these functions are provided by a single tank. The Applicant is therefore able to provide a new delivery service for clients, instead of two separate services. The claimed invention represents a marked departure from the industry's mindset. The claimed highway tank may be easily made once the idea has been explained, but this is with the benefit of hindsight. The inventors were the first to come up with the idea of creating a single tank to fulfill the roles of both a transport tank and a storage tank. The patent should not be denied patent protection simply because the idea is easily implemented. This principle is evident from *Goodyear Tire & Rubber Co. v. Ray-O-Vac Co.*, 321 U.S. 275 (1944) at 279, where the court held that "Viewed after the event, the

means ... adopted seem simple and such as should have been obvious to those who worked in the field, but this is not enough to negative invention." Again, in *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (1987) at 1572: "The constitutional purpose [of the patent system] is to encourage disclosure of patentable contributions to "progress in the useful arts", *all* the useful arts, not just the esoteric. The statute requires utility, novelty, and nonobviousness, not complexity." (emphasis in original)

In summary, it would not be obvious to modify Watkins, Jr. to have a double-walled tank to provide better leak detection, as the single-walled tanks presently used are sufficiently safe and can be easily inspected. In addition, neither of these references discusses the use of a double-walled tank for on site storage of fuel. Yamamoto teaches a double-walled tank for reasons applicable to cryogenic fluids and not to fuel, and the combination of Yamamoto, and Watkins, Jr. is therefore inappropriate. The Applicant submits that it would not be obvious to one skilled in the art to use a highway tank as a storage tank, and therefore there would be no motivation to provide a double walled highway tank. As claims 2 and 4 through 19 depend upon claim 1, it is submitted that these are also not obvious based on similar arguments.

2. The rejection of Claims 20 – 23 over Watkins in view of Yamamoto

a. *Ascertaining the differences between the claimed invention and the references*

In addition to requiring a double walled tank on a chassis with wheels, claim 20 specifically recites "transporting the fluid to a location" and "storing the fluid in the tank at the location", and 23 recites the same with "fuel" substituted for "fluid". As stated above, the current industry practice is to provide a separate tank for each function. Watkins transports fuel but does not store it in the tank at a location. Yamamoto discloses a design for a tank for cryogenic fluids that can be used either for a tanker ship or for an onshore storage facility.

b. Determination of whether the claimed invention would have been obvious to one of ordinary skill in the art

As argued above with respect to claim 1, it would not be obvious to modify the tank of Watkins, Jr. to be double-walled. Furthermore, Watkins, Jr. does not suggest that his tank would be suitable for onsite storage of fluid. Yamamoto does not disclose or suggest the use of the same tank for both transportation and storage, and in any case even if Yamamoto had such a teaching it would not be obvious to apply it to a tank on a chassis with wheels. Because of common practices in the industry, the differences in regulation, and the lack of teachings by either reference, the Applicant submits that these claims would not be obvious. As claims 21 and 22 depend upon claim 20, the Applicant submits that these claims are also not obvious.

(viii). CONCLUSION

In light of the above arguments, appellants submit that claims 1, 20 and 23 are patentable over Watkins, Jr. in view of Yamamoto, as there is no motivation to combine the references to obtain the claimed invention, and even if there were motivation, the combination does not lead to what is claimed. Accordingly, appellants submit that the Office Action has failed to present a *prima facie* case of obviousness that supports a rejection of these claims. The Board should direct that the 35 U.S.C. § 103(a) rejection of claims 1, 20 and 23 be withdrawn and the claim allowed. As claims 2, 4 – 19, 21 and 22 depend upon either claim 1 or 20 directly or indirectly, these claims should also be allowed.

February 23, 2010
Respectfully submitted.



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(ix). CLAIM APPENDIX

1. A highway tank for onsite storage of fuel, the highway tank being double-walled and mobile, and comprising:

 a chassis;

 ground engaging wheels supported by the chassis;

 a tank, the tank being double-walled, the tank mounted on the chassis in a horizontally disposed manner; and

 a fluid transfer system connected to the tank for filling and discharging the tank, the fluid transfer system mounted on the chassis and connected to the tank for fluid transfer, the fluid transfer system comprising fuel-forwarding equipment.

2. The highway tank of claim 1 in which the tank is substantially cylindrical.

3. (Cancelled)

4. The highway tank of claim 1 in which the fuel-forwarding equipment comprises a fuel filter, a generator and a fuel pump.

5. The highway tank of claim 4 in which the fuel forwarding equipment is located in a cabinet below the tank.

6. The highway tank of claim 4 in which the fuel forwarding equipment is located in front of the tank.

7. The highway tank of claim 4 in which the generator is located a safe distance from the fuel pump.

8. The highway tank of claim 1 in which the tank has bottom loading equipment.

9. The highway tank of claim 8 in which the fluid transfer system comprises a level sensor, a vent, and a bottom loading valve.
10. The highway tank of claim 1 in which the tank comprises a top loading valve system.
11. The highway tank of claim 10 in which the top loading valve system comprises overfill protection.
12. The highway tank of claim 1 further comprising a sliptank mounted on the chassis to store fuel separate from the tank.
13. The highway tank of claim 1 in which the tank is divided into plural sections for separating fuel, each section having a valve system for loading and unloading the section.
14. The highway tank of claim 1 in which the tank comprises baffles on the interior of the tank.
15. The highway tank of claim 8 in which the fluid transfer system further comprises anti-siphon protection.
16. The highway tank of claim 1 further comprising a drip tray mounted on the chassis and associated with the fluid transfer system to catch spills of fluid occurring during fluid transfer.
17. The highway tank of claim 16 in which the drip tray comprises the bottom of a cabinet under the tank, the bottom of the cabinet having a surrounding wall below the access to the cabinet and the bottom having a drain to remove any fluid.

18. The highway tank of claim 1 in which the walls of the tank are comprised of aluminum.
19. The highway tank of claim 1 in which the walls of the tank are comprised of steel.
20. A method of transporting and storing fluids, the method comprising the steps of:
 providing a tank that is double walled on a chassis in a horizontally disposed manner, the chassis also supporting ground engaging wheels, the tank being connected to a fluid transfer system for filling and discharging the tank, the fluid transfer system comprising fuel-forwarding equipment;
 filling the tank with a fluid;
 transporting the fluid to a location;
 storing the fluid in the tank at the location; and
 using the fuel-forwarding equipment to fuel equipment used at the location.
21. The method of claim 20 in which the tank is substantially cylindrical.
22. The method of claim 20 further comprising the step of refilling the tank at the location.
23. A method of transporting and storing fuel, the method comprising the steps of:
 providing a tank as defined by claim 1;
 filling the tank with a fuel;
 transporting the fuel to a location;
 storing the fuel in the tank at the location; and
 using the tank at the location to fuel equipment used at the location.

(x). EVIDENCE APPENDIX

None.

(xi). RELATED PROCEEDINGS APPENDIX

None.